



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,818	03/04/2004	Sean Chang	0941-0927P	3664

2292 7590 05/26/2009
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

JOHNSON, MATTHEW A

ART UNIT	PAPER NUMBER
----------	--------------

3656

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

05/26/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/791,818	Applicant(s) CHANG, SEAN	
	Examiner MATTHEW A. JOHNSON	Art Unit 3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-10, 13-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-10, 13-18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/1/2009 has been entered.

Claim Objections

2. Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitations of claim 20 has been previously recited in independent claim 16, and the subject matter of claim 20 does not further limit the claimed subject matter of claim 16.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8-10, 13-18 and 20-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hung (USP-6,747,803) in view of Goodrich et al. (USP-3,696,688) further in view of Yoshida (JP-2000-215568).

Re clm 8: Hung discloses an anti-vibration apparatus applied in a rotating disk (12) of an image display system for eliminating unbalance of the rotating disk, comprising:

- A motor (2) for providing rotation power
- A spindle (rotary axle; C2 L4-6) housed in the motor and coupled with the rotating disk for transmitting the rotation power to drive the rotating disk (12)
- A holding chamber (11)
- A curable fluid (UV glue) contained in the holding chamber
- Wherein the fluid is distributed at the periphery side of the holding chamber to balance the rotating disk and the fluid is cured (C2 L12-14, 28-31)
- Wherein the curable fluid is a thermal sensitive curable fluid (UV glue)

While Hung does indeed disclose that the curable fluid flows to the periphery side of the holder under a vibration force and is distributed in such a way to balance the disk, he does not disclose a predetermined amount of spheres placed in the holder.

Goodrich teaches an anti-vibration apparatus for eliminating vibration of a rotating disk resulting from unbalance comprising a fluid (21) and a predetermined amount of spheres (20) placed in a holder (17) formed on a rotating disk (10) for the

Art Unit: 3656

purpose of providing a better damping device which can reduce vibrations caused by a higher amplitude of vibration during a higher rotational speed.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to add a predetermined amount of spheres into the curable fluid of Hung for the purpose of providing a better damping device which can reduce vibrations caused by a higher amplitude of vibration during a higher rotational speed.

Hung in view of Goodrich discloses all of the claim limitations as described above.

While Hung does indeed disclose a holding chamber (11) having a sidewall extended away from the rotating disk (Fig. 1), Hung does not disclose a flange formed on a top end of the side wall as a monolithic piece and extending toward a center of the rotating disk, the flange surrounding an empty opening formed on the top of the holding chamber.

Yoshida teaches an anti-vibration apparatus applied in a rotating disk having a holding chamber (41) having a flange (41e) formed on a top end of the side wall as a monolithic piece and extending toward a center of the rotating disk, the flange surrounding an empty opening (41d) formed on the top of the holding chamber (Fig. 2) in order to achieve the predictable result of preventing the vibration dampening element (46) from being expelled by the centrifugal force of the rotating disk.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have modified the holding chamber of the device of Hung in view of Goodrich, so as to have a flange formed on a top end of the side wall as a monolithic

Art Unit: 3656

piece and extending toward a center of the rotating disk, the flange surrounding an empty opening formed on the top of the holding chamber, as taught by Yoshida, in order to achieve the predictable result of preventing the vibration dampening element (46) from being expelled by the centrifugal force of the rotating disk.

Re clms 9 and 10: Hung further discloses that the holder (11) is formed by an annular element bonded by means of adhering (C2 L6-8) and coupling to the disk (12).

Re clm 13: Hung further discloses that the holder (11) and the rotating disk (12) are coaxial.

Re clm 14: Goodrich further discloses that the spheres (20) are made of metal (C1 L55).

Re clm 15: The examiner notes that the limitation, "...the curable fluid is cured by providing photo energy, thermal energy or catalyst" is a product-by-process claim. The patentability of a product does not depend on its method of production (See MPEP 2113). Additionally, Hung further discloses the curable fluid is cured by providing thermal energy (UV glue, C2 L12-14).

Re clm 16: Hung discloses a color wheel module (1) applied in an image display system for modulating the color of an incident light comprising:

- A motor (2) for providing rotation power
- A disk-shaped color filter disk (12) with a plurality of thin film color filters (12a-12d) being driven to rotate by the motor for alternately modulating the color of the incident light

Art Unit: 3656

- A holding chamber (11) formed on the disk-shaped color filter disk
- A curable fluid (UV glue) contained in the holding chamber
- Wherein the fluid is distributed at the periphery side of the holding chamber to balance the disk shaped color filter disk and the fluid is cured (C2 L12-14, 28-31)
- Wherein the curable fluid is a thermal sensitive curable fluid (UV glue)

While Hung does indeed disclose that the curable fluid flows to the periphery side of the holder under a vibration force and is distributed in such a way to balance the disk, he does not disclose a predetermined amount of spheres placed in the holder.

Goodrich teaches an anti-vibration apparatus for eliminating vibration of a rotating disk resulting from unbalance comprising a fluid (21) and a predetermined amount of spheres (20) placed in a holder (17) formed on a rotating disk (10) for the purpose of providing a better damping device which can reduce vibrations cause by a higher amplitude of vibration during a higher rotational speed.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to add a predetermined amount of spheres into the curable fluid of Hung for the purpose of providing a better damping device which can reduce vibrations caused by a higher amplitude of vibration during a higher rotational speed.

Hung in view of Goodrich discloses all of the claim limitations as described above.

While Hung does indeed disclose a holding chamber (11) having a sidewall extended away from the rotating disk (Fig. 1), Hung does not disclose a flange formed on a top end of the side wall as a monolithic piece and extending toward a center of the rotating disk, the flange surrounding an empty opening formed on the top of the holding chamber.

Yoshida teaches an anti-vibration apparatus applied in a rotating disk having a holding chamber (41) having a flange (41e) formed on a top end of the side wall as a monolithic piece and extending toward a center of the rotating disk, the flange surrounding an empty opening (41d) formed on the top of the holding chamber (Fig. 2) in order to achieve the predictable result of preventing the vibration dampening element (46) from being expelled by the centrifugal force of the rotating disk.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have modified the holding chamber of the device of Hung in view of Goodrich, so as to have a flange formed on a top end of the side wall as a monolithic piece and extending toward a center of the rotating disk, the flange surrounding an empty opening formed on the top of the holding chamber, as taught by Yoshida, in order to achieve the predictable result of preventing the vibration dampening element (46) from being expelled by the centrifugal force of the rotating disk.

Re clms 17 and 18: Hung further discloses that the holding chamber (11) is formed by an annular element bonded by means of adhering (C2 L6-8) and coupling to the disk (12).

Re clm 20: Satoshi further discloses the holding chamber has a flange (41e) located on a top end of the side wall thereof and extended toward a center of the rotating disk (Fig. 2).

Re clm 21: Hung further discloses that the holder (11) and the rotating disk (12) are coaxial.

Re clm 22: Goodrich further discloses that the spheres (20) are made of metal (C1 L55).

Response to Arguments

5. Applicant's arguments with respect to claims 8 and 16, regarding the flange have been considered but are moot in view of the new ground(s) of rejection.

Regarding the rejection of claims 8 and 16 based on Hung in view of Goodrich, Applicant further argues that neither reference teaches that the spheres are fixed by UV glue. In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Goodrich discloses a holder containing a fluid and a plurality of spheres placed in the holder. Hung teaches the use of UV glue for the purpose of permanently balancing

Art Unit: 3656

the disk. A full explanation of the rationale for combining Hung and Goodrich can be found in the BPAI decision (Appeal No. 2007-1243) for Applicant's co-pending application 10/336,018. For Applicant's convenience, an excerpt from the Board decision is included below giving a detailed explanation of why the combination is proper. From page 9 of BPAI decision (Appeal No. 2007-1243): "Goodrich teaches a holder for balancing rotating masses which includes a holder and ball shaped masses and a fluid. Fact 11. The device balances the rotating mass by rotating the object and the balls and fluid flow to oppose the eccentric mass and reduce vibrations of the rotating object. Fact 12. It is readily apparent from reading the disclosure of Goodrich that the device operates each time the rotating object is used, i.e. it does not provide a permanent balance but rebalances with each operation of the object. Fact 16. As discussed *supra*, Hung teaches a device for balancing rotating objects where in the balancing procedure permanently balances the rotating object by adding or removing mass in a permanent manner, i.e. placing UV glue in a location to oppose the eccentric mass and curing it. We consider that one skilled in the art viewing Goodrich and Hung would recognize that Hung's teaching of curing UV glue, and to Goodrich's system of rotating a holder with balls and fluid to counter act vibration could be combined to allow Goodrich's device to permanently balance the rotating object. Goodrich states that the purpose of the fluid (lubricant) in the holder with the balls is to dampen the movement of the balls. Hung's UV glue would provide this function during initial operation and then by curing, adhere the balls in the appropriate location to counteract the rotating object's eccentric mass permanently.

Art Unit: 3656

Thus, we find ample evidence to support the Examiner's rejection based upon Hung and Goodrich".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW A. JOHNSON whose telephone number is (571)272-7944. The examiner can normally be reached on Monday - Friday 9:00a.m. - 5:30p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MATTHEW A JOHNSON/
Examiner, Art Unit 3656

Application/Control Number: 10/791,818

Page 11

Art Unit: 3656

/Richard WL Ridley/

Supervisory Patent Examiner, Art Unit 3656